MPM2D Name: _____

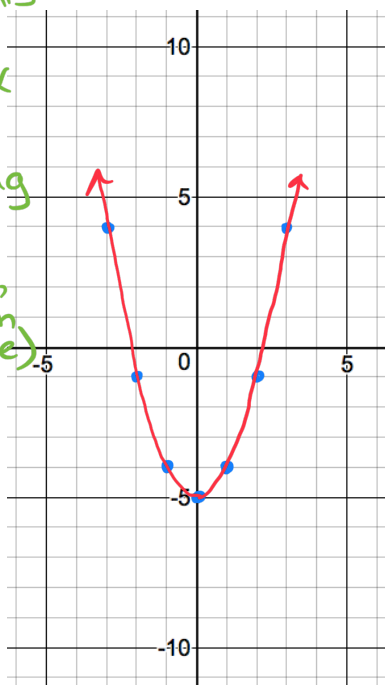
Thread 2, Quiz 1 – Graphing and Analyzing Quadratics

1. Graph each quadratic relation; be sure to plot <u>seven points</u> (vertex and six other points).

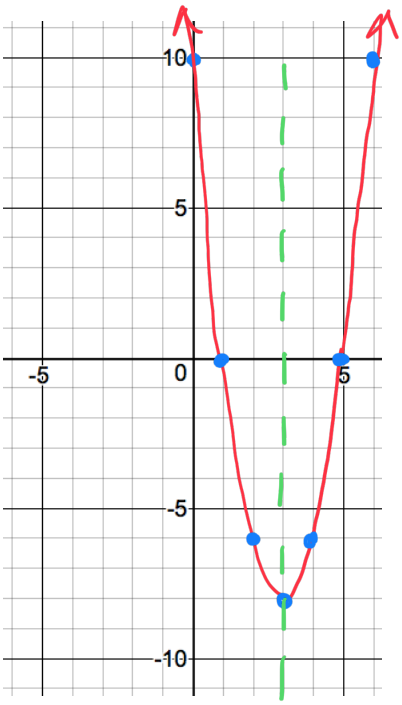
½ vertex
½ other points relative to vertex
½ direction of opening
½ good form (arrows, smooth curve)

K 2, 2

$y = x^2 - 5$

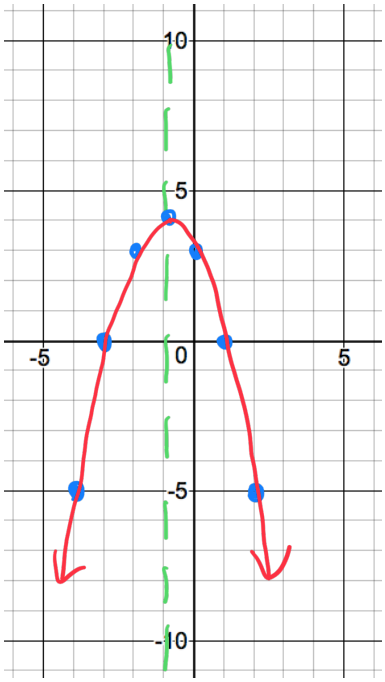


$y = 2(x - 1)(x - 5)$

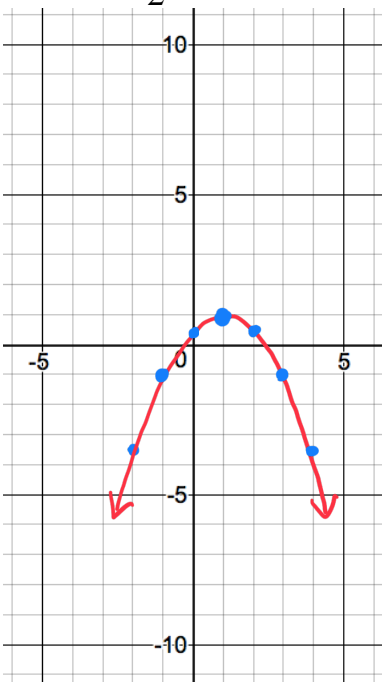


K 2, 2

$y = -(x + 3)(x - 1)$



$y = -\frac{1}{2}(x - 1)^2 + 1$



2. Analyze each quadratic relation shown below.

K 3, 3

$y = 2x^2$	$y = -(x+3)^2 - 7$
opens: up	opens: down
scale factor & transformation: 2, creating a stretch	scale factor & transformation: none, reflection in x-axis
vertex: (0, 0)	vertex: (-3, -7)
eq'n of axis of symmetry: $x = 0$	eq'n of axis of symmetry: $x = -3$
values x may take: $-\infty$ to $+\infty$	values x may take: $-\infty$ to $+\infty$
values y may take: 0 to $+\infty$	values y may take: $-\infty$ to -7
max / min value: min, 0	max / min value: max, -7

3. Write an equation for each quadratic relation described below.

a) A quadratic that is translated 6 units upward, and 2 units to the right.

K 1 $y = (x-2)^2 + 6$

b) A quadratic that is translated 3 units upward, 5 units to the left, and reflected in the x-axis.

K 1 1/2 $y = -(x+5)^2 + 3$

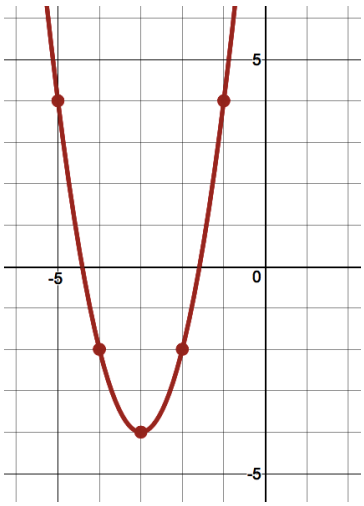
c) A quadratic with x-intercepts at 1 and 5, with a scale factor of 2 applied, resulting in a vertical stretch.

K 1 1/2 $y = 2(x-1)(x-5)$

4. Write an equation for each parabola, using either vertex form or intercepts form.

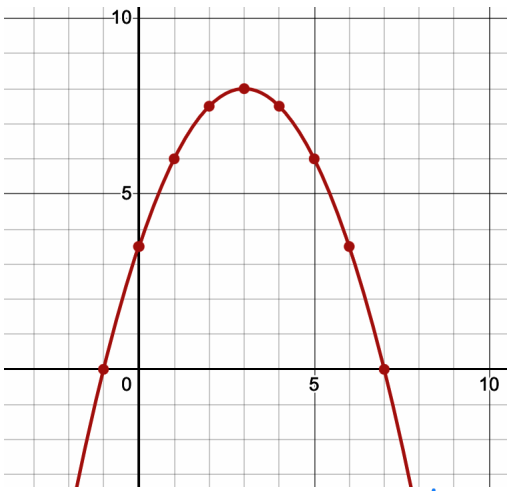
K 2, 2

a)



$y = 2(x+3)^2 - 4$

b)



$y = -\frac{1}{2}(x+1)(x-7)$

or $y = -\frac{1}{2}(x-3)^2 + 8$